No. 200300216

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

John Bodger & Sons Company

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR ...PORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ...E PURPOSE , OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE ...E, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT ... BY THE PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

VINCA

'Heatwave Red'

In Testimony Whereof, *I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this fourteenth day of February, in the year two thousand and six.*

Attest:

Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Secretary of Agriculture

REPRODUCE LOCALLY. *Include form number and date on all reproductions* — Form Approved - OMB No. 0581-0055

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY - PLANT VARIETY PROTECTION OFFICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE
(Instructions and information collection burden statement on reverse)

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF OWNER
JOHN BODGER & SONS COMPANY

2. TEMPORARY DESIGNATION OR EXPERIMENTAL NAME
M7036

3. VARIETY NAME
Heatwave Red

4. ADDRESS *(Street and No., or R.F.D. No., City, State, and ZIP Code, and Country)*
1800 TYLER AVENUE
SOUTH EL MONTE, CA 91733 USA

5. TELEPHONE *(include area code)*
626-442-6161

6. FAX *(include area code)*
626-442-4100

FOR OFFICIAL USE ONLY

PVPO NUMBER
200300216

FILING DATE
April 16, 2003

7. IF THE OWNER NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION *(corporation, partnership, association, etc.)*
CORPORATION

8. IF INCORPORATED, GIVE STATE OF INCORPORATION
CALIFORNIA

9. DATE OF INCORPORATION
February 7, 1912

10. NAME AND ADDRESS OF OWNER REPRESENTATIVE(S) TO SERVE IN THIS APPLICATION. *(First person listed will receive all papers)*
KIM BODGER
JOHN BODGER & SONS COMPANY
1800 TYLER AVENUE
SOUTH EL MONTE, CA 91733

FEES RECEIVED

FILING AND EXAMINATION FEES:
$ 3652.00
DATE 4/16/03

CERTIFICATION FEE:
$ 682.00 + 38.00
DATE 10/18/05 & 10/24/05

11. TELEPHONE *(Include area code)*
626-442-6161

12. FAX *(Include area code)*
626-442-4100

13. E-MAIL
kbodger@bodger.com

14. CROP KIND *(Common Name)*
VINCA

16. FAMILY NAME *(Botanical)*
APOCYNACEAE

15. GENUS AND SPECIES NAME OF CROP
CATHARANTHUS ROSEUS

17. IS THE VARIETY A FIRST GENERATION HYBRID?
☐ YES ☒ NO

18. DOES THE VARIETY CONTAIN ANY TRANSGENES? (*OPTIONAL*)
☐ YES ☒ NO
IF SO, PLEASE GIVE THE ASSIGNED USDA-APHIS REFERENCE NUMBER FOR THE APPROVED PETITION TO DEREGULATE THE GENETICALLY MODIFIED PLANT FOR COMMERICALIZATION. _____

19. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions on reverse)
- a. ☒ Exhibit A. Origin and Breeding History of the Variety
- b. ☒ Exhibit B. Statement of Distinctness
- c. ☒ Exhibit C. Objective Description of Variety
- d. ☐ Exhibit D. Additional Description of the Variety *(Optional)*
- e. ☒ Exhibit E. Statement of the Basis of the Owner's Ownership
- f. ☒ Voucher Sample *(2,500 viable untreated seeds or, for tuber propagated varieties, verification that tissue culture will be deposited and maintained in an approved public repository)*
- g. ☒ Filing and Examination Fee ($3,652), made payable to "Treasurer of the United States" *(Mail to the Plant Variety Protection Office)*

20. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE SOLD AS A CLASS OF CERTIFIED SEED? *(See Section 83(a) of the Plant Variety Protection Act)*
☐ YES *(If "yes", answer items 21 and 22 below)* ☒ NO *(If "no", go to item 23)*

21. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF CLASSES?
☐ YES ☒ NO
IF YES, WHICH CLASSES? ☐ FOUNDATION ☐ REGISTERED ☐ CERTIFIED

22. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?
☐ YES ☒ NO
IF YES, SPECIFY THE NUMBER 1,2,3, etc. FOR EACH CLASS.
☐ FOUNDATION ☐ REGISTERED ☐ CERTIFIED
(If additional explanation is necessary, please use the space indicated on the reverse.)

23. HAS THE VARIETY (INCLUDING ANY HARVESTED MATERIAL) OR A HYBRID PRODUCED FROM THIS VARIETY BEEN SOLD, DISPOSED OF, TRANSFERRED, OR USED IN THE U. S. OR OTHER COUNTRIES?
☒ YES ☐ NO See data from original submission
IF YES, YOU MUST PROVIDE THE DATE OF FIRST SALE, DISPOSITION, TRANSFER, OR USE FOR EACH COUNTRY AND THE CIRCUMSTANCES. *(Please use space indicated on reverse.)*

24. IS THE VARIETY OR ANY COMPONENT OF THE VARIETY PROTECTED BY INTELLECTUAL PROPERTY RIGHT *(PLANT BREEDER'S RIGHT OR PATENT)*?
☐ YES ☒ NO
IF YES, PLEASE GIVE COUNTRY, DATE OF FILING OR ISSUANCE AND ASSIGNED REFERENCE NUMBER. *(Please use space indicated on reverse.)*

25. The owners declare that a viable sample of basic seed of the variety has been furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate.

The undersigned owner(s) is(are) the owner of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Owner(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF OWNER		SIGNATURE OF OWNER	
NAME *(Please print or type)*		NAME *(Please print or type)*	
WALTER KENNETH BODGER JR.			
CAPACITY OR TITLE	DATE	CAPACITY OR TITLE	DATE
VICE PRESIDENT	11/29/04		

11/30/04

original date 4/10/03

(See reverse for Instructions and information collection burden statement)

JMS

ST-470 (04-03) designed by the Plant Variety Protection Office using Word 2002.

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INSTRUCTIONS

GENERAL: To be effectively filed with the Plant Variety Protection Office (PVPO), **ALL** of the following items must be **received** in the PVPO: (1) Completed application form signed by the owner; (2) completed exhibits A, B, C, E; (3) for a seed reproduced variety at least 2,500 viable untreated seeds, for a hybrid variety at least 2,500 untreated seeds of each line necessary to **reproduce** the variety, or for tuber reproduced varieties verification that a viable *(in the sense that it will reproduce an entire plant)* tissue culture will be deposited and maintained in an approved public repository; (4) check drawn on a U.S. bank for $3,652 ($432 filing fee and $3,220 examination fee), payable to "Treasurer of the United States" *(See Section 97.6 of the Regulations and Rules of Practice.)* Partial applications will be held in the PVPO for not more than 90 days, then returned to the applicant as unfiled. Mail application and other requirements to Plant Variety Protection Office, AMS, USDA, Room 401, NAL Building, 10301 Baltimore Avenue, Beltsville, MD 20705-2351. Retain one copy for your files. All items on the face of the application are self explanatory unless noted below. Corrections on the application form and exhibits must be initialed and dated. **DO NOT** use masking materials to make corrections. If a certificate is allowed, you will be requested to send a check payable to "Treasurer of the United States" in the amount of $432 for issuance of the certificate. Certificates will be issued to owner, not licensee or agent.

Plant Variety Protection Office
Telephone: (301) 504-5518
FAX: (301) 504-5291
Homepage: http://www.ams.usda.gov/science/pvpo/pvpindex.htm

To avoid conflict with other variety names in use, the applicant must check the appropriate recognized authority and provide evidence that name has been cleared by the appropriate recognized authority before the Certificate of Protection is issued. For example, for agricultural and vegetable crops, contact: Seed Branch, AMS, USDA, 10301 Baltimore Avenue, Suite 401 NAL Building, Beltsville, MD 20705. Telephone: (301) 504-5682 http://www.ams.usda.gov/lsg/seed.htm.

ITEM

19a. Give: (1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method;
(2) the details of subsequent stages of selection and multiplication;
(3) evidence of uniformity and stability; and
(4) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified

19b. Give a summary of the variety's distinctness. Clearly state how this application variety may be distinguished from all other varieties in the same crop. If the new variety is most similar to one variety or a group of related varieties:

(1) identify these varieties and state all differences objectively;
(2) attach statistical data for characters expressed numerically and demonstrate that these are clear differences; and
(3) submit, if helpful, seed and plant specimens or photographs (prints) of seed and plant comparisons which clearly indicate distinctness.

19c. Exhibit C forms are available from the PVPO Office for most crops; specify crop kind. Fill in Exhibit C (Objective Description of Variety) form as completely as possible to describe your variety.

19d. Optional additional characteristics and/or photographs. Describe any additional characteristics that cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the characteristics that are difficult to describe, such as plant habit, plant color, disease resistance, *etc.*

19e. Section 52(5) of the Act requires applicants to furnish a statement of the basis of the applicant's ownership. An Exhibit E form is available from the PVPO.

20. If "Yes" is specified *(seed of this variety be sold by variety name only, as a class of certified seed)*, the applicant **MAY NOT** reverse this affirmative decision after the variety has been sold and so labeled, the decision published, or the certificate issued. However, if "No" has been specified, the applicant may change the choice. *(See Regulations and Rules of Practice, Section 97.103).*

23. *See Sections 41, 42, and 43 of the Act and Section 97.5 of the regulations for eligibility requirements.*

24. *See Section 55 of the Act for instructions on claiming the benefit of an earlier filing date.*

22. CONTINUED FROM FRONT *(Please provide a statement as to the limitation and sequence of generations that may be certified.)*

N/A

23. CONTINUED FROM FRONT *(Please provide the date of first sale, disposition, transfer, or use for each country and the circumstances, if the variety (including any harvested material) or a hybrid produced from this variety has been sold, disposed of, transferred, or used in the U.S. or other countries.)*

USA 5/31/02 ~~N/A~~

JMS 11/30/04

24. CONTINUED FROM FRONT *(Please give the country, date of filing or issuance, and assigned reference number, if the variety or any component of the variety is protected by intellectual property right (Plant Breeder's Right or Patent).)*

N/A

NOTES: It is the responsibility of the applicant/owner to keep the PVPO informed of any changes of address or change of ownership or assignment or owner's representative during the life of the application/certificate. The fees for filing a change of address; owner's representative; ownership or assignment; or any modification of owner's name is specified in Section 97.175 of the regulations. *(See Section 101 of the Act, and Sections 97.130, 97.131, 97.175(h) of the Regulations and Rules of Practice.)*

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DRAFT Exhibit A Form

1. Describe the genealogy (back to and including public and commercial varieties, lines, or clones used) and the breeding method(s):
Crossing the commercial varieties Balcony Purple x Heatwave Rose in 1993 resulted in a rose flowered breeding line. Heatwave Red was derived from an F1 cross between the commercial variety Pacifica Red and this rose flowered breeding line in 1995. A large flowered rose single plant selection was made from the F1, which was self-pollinated and an F2 population grown. From the segregating F2 population a red flowered compact plant with good basil breaks was selected. Four additional generations were grown which were all the result of single plants that were self-pollinated. Selection pressure was for earliness, good basil breaks, compact habit and large red flowers. The last generation was stable for all traits selected. 30 plants were selected from the F4 population and the seed was bulked and used as stock seed for the first crop. All of the above noted crosses and selections were done in Lompoc, California.

2. Give the details of subsequent stages or selections and multiplications:

Year			Details of Stage	Selection Criteria
1993	F1	3CA138	Balcony Purple x Heatwave Rose	---
1994	F2	4CA260	F1 Purple-Rose selection 3CA138-2 self	Earliness, compact habit good basil breaks
1995	F1	5CA1003	F2 Rose selection 4CA260-2 x Pacifica Red	---
1996	F2	6CA117	F1 Rose selection 5CA1003-2 self	Earliness, compact habit good basil breaks, large red flowers
1997	F3	6CA1363	F2 Red selection 6CA117-1 self	Same as above
1998	F4	7CA656	F3 Red selection 1363-3 self (30 plant bulk seed from this selection used as foundation. Stock seed for the first stock seed increase in 1999)	Same as above

3a. Is the variety uniform: __X__ Yes _____ No

How did you test for uniformity: Stock seed increases and commercial productions are inspected during the growing period and any lack of uniformity is noted. In addition, samples from stock seed increases and commercial productions are grown and evaluated for uniformity. Stock seed increases, test productions, and/or commercial productions have been grown on a yearly basis since 1999. All increases and/or productions have been inspected and tested and shown to be uniform. All stock seed increases have used the previous year's stock seed as planting seed. Thus, it can be stated that the variety has been observed as uniform for five generations (1 generation per year from 1999 to 2004).

3b. Is the variety stable: __X__ Yes _____ No

How did you test for stability? Over how many generations? Stock seed increases and commercial productions are inspected during the growing period and any lack of deterioration from the previous year's increases or crops is noted. In addition, samples from stock seed increases and commercial productions are grown and evaluated for quality and deterioration from the previous year's increases or crops. Stock seed increases, test productions, and/or commercial productions have been grown on a yearly basis since 1999. All increases and/or productions have been inspected and tested and shown not to have deteriorated from the previous year's increases or crops. All stockseed increases have used the previous year's stock seed as planting seed. Thus, it can be stated that the variety has been observed as stable for five generations (1 generation per year from 1999 to 2004).

4. Are genetic variants observed or expected during reproduction and multiplication? _____ Yes __x__ No

If yes, state how these variants may be identified, their type and frequency.

* Balcony Purple is from Dai Ichi Seed Company in Japan

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DRAFT Exhibit B Form

Based on overall morphology, Heatwave Red (*Applicant's new variety*) is most similar to Pacifica Red (*Most similar comparison variety(ies)*).

Heatwave Red (*Applicant's new variety*) most clearly differs from Pacifica Red (*Most similar comparison variety(ies)*) in the following traits:

Name the specific trait, then list the value of that trait for each variety in the comparison. Attach appropriate supporting evidence (see the Guidelines for Presenting Evidence in Support of Variety Distinctness, available from the PVP Office or website).

Eg. Leaf Pubescence *Eg. Leaf Color* *Eg. Plant Height*	*heavy pubescence* *Dark Green (5GY 3/4)* *200 cm +/- 10 cm (N=25)* Heatwave	*glabrous* *Light Green (2.5GY 8/10)* *250 cm +/- 15 cm (N=25)* Pacifica	*photograph attached* *Munsell Color Chart* *statistics attached*
1. Qualitative traits: Ring Shape	Applicant's New Variety Red The ring starts in a "donut" shape then fades to look like a star.	1st Comparison Variety Red The ring starts in a "donut" shape then fades away. It never looks like a star.	Location of Evidence Photo attached
Ring Distinctness	More Distinct - A Ring is always visible.	Less Distinct - The ring starts looking like a donut then fades away.	Photo attached
2. Color traits: Petal Color	Rosy Red 57A. The petals start one shade darker than 57A lightening to true 57A, as they age. Petal margins fade to 63A.	Rosy Red 57B. The petals start 57B shading to 57A toward the center of flower. As flowers age, they become all 57B.	Photo attached
Orifice Color	Pale Yellow 11A	Cream Yellow 10B	Photo attached
3. Quantitative traits:	Mean / Range / N=	Mean / Range / N=	
Flower Diameter	51.1 / 48-55 / 10	47.1 / 43-50 / 10	Statistics attached
Petal Length	24.9 / 23-27 / 10	22.8 / 21-24 / 10	Statistics attached
Petal Width	31.4 / 28-34 / 10	27.6 / 23-29 / 10	Statistics attached
Ring Width	5.4 / 4-6 / 10	2.7 / 2-4 / 10	Statistics attached
Leaf Length	73 / 68-78 / 10	76.5 / 70-85 / 10	Statistics attached
Leaf Width	30.1 / 27-34 / 10	27.9 / 25-32 / 10	Statistics attached
4. Other:			

Use additional tables to present clear differences for additional comparison varieties. Use additional pages to present supporting evidence.

Vinca Heatwave Red

Vinca Pacifica Red

Vinca Heatwave Red ~ M7036 ~ Photograph for Exhibit B ~ Parts 1, 2, 3

Vinca Heatwave Red Vinca Pacifica Red

Vinca Heatwave Red ~ M7036 ~ Photograph in response to Exhibit C ~ Part 8

Vinca Heatwave Red

Vinca Pacifica Red

20030216

Vinca Heatwave Red
M7036
Supplement to Exhibit B – Statement of Distinctness
Statistical Data (In Millimeters)

1. FLOWER DIAMETER

   A. Heatwave Red

      Mean = 51.1
      Min = 48
      Max = 55
      Std Deviation = 2.1189
      N = 10
      Sum = 511

   B. Pacifica Red

      Mean = 47.1
      Min = 43
      Max = 50
      Std Deviation = 1.70000
      N = 10
      Sum = 411

   C. LSD (P = 0.01) indicates statistically significant differences at 99% confidence level.

2. PETAL LENGTH

   A. Heatwave Red

      Mean = 24.9
      Min = 23
      Max = 27
      Std Deviation = 1.2999
      N = 10
      Sum = 249

   B. Pacifica Red

      Mean = 22.8
      Min = 21
      Max = 24
      Std Deviation = 0.9797
      N = 10
      Sum = 228

   C. LSD (P = 0.01) indicates statistically significant differences at 99% confidence level.

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Vinca Heatwave Red
M7036
Supplement to Exhibit B – Statement of Distinctness
Statistical Data (In Millimeters)
Page 2

3. PETAL WIDTH

   A. Heatwave Red

      Mean = 31.4
      Min = 28
      Max = 34
      Std Deviation = 1.7999
      N = 10
      Sum = 314

   B. Pacifica Red

      Mean = 27.6
      Min = 23
      Max = 29
      Std Deviation = 1.7435
      N = 10
      Sum = 276

   C. LSD (P = 0.01) indicates statistically significant differences at 99% confidence level.

4. RING WIDTH (from outside edge of eye/orifice to edge of color band)

   A. Heatwave Red

      Mean = 5.4
      Min = 4.0
      Max = 6.0
      Std Deviation = .66332
      N = 10
      Sum = 54

   B. Pacifica Red

      Mean = 2.7
      Min = 2.0
      Max = 4.0
      Std Deviation = .59371
      N = 10
      Sum = 27

   C. LSD (P = 0.01) indicates statistically significant differences at 99% confidence level.

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Vinca Heatwave Red
M7036
Supplement to Exhibit B – Statement of Distinctness
Statistical Data (In Millimeters)

5. LEAF LENGTH

A. Heatwave Red

Mean = 73
Min = 68
Max = 78
Std Deviation = 2.7202
N = 10
Sum = 730

B. Pacifica Red

Mean = 76.5
Min = 70
Max = 85
Std Deviation = 3.9812
N = 10
Sum = 765

C. LSD (P = 0.05) indicates statistically significant differences at 95% confidence level.

6. LEAF WIDTH

A. Heatwave Red

Mean = 30.1
Min = 27
Max = 34
Std Deviation = 2.4269
N = 10
Sum = 301

B. Pacifica Red

Mean = 27.9
Min = 25
Max = 32
Std Deviation = 2.0712
N = 10
Sum = 279

C. LSD (P = 0.05) indicates statistically significant differences at 95% confidence level.

YEAR # 1 -						
FLOWER DIAMETER (MM)						
TAKEN FROM 20 RANDOMLY SELECTED PLANTS						
VARIETY	M7036 Red	Pacifica Red				
MEAN	58.28	53.20				
MIN	52.5	48.5				
MAX	62.0	59.0				
STD-S	2.89	2.45				
Analysis of Variance: One Way						
Summary						
Groups	***Count***	***Sum***	***Average***	***Variance***		
Column 1	20	1165.50	58.28	8.38		
Column 2	20	1064.00	53.20	6.01		
Analysis of Variance						
Source of Variation						
	SS	***df***	***MS***	***F***	***P-value***	***F-crit***
Between Groups	257.56	1	257.56	35.79	0.0000006	4.10
Within Groups	273.44	38	7.20			
Total	530.99	39				
LSD P=0.05	1.78					

M7036 Red	Pacifica Red
58.28	53.20
a	b

LSD (P=0.05) indicates that there was a significant difference for the flower diameter trait between M7036 Red and Pacifica Red.

The trial was organized in a completely randomized design and the test plants were grown under greenhouse conditions. The data showed a normal distribution and no pooling of data from several trials was done.

YEAR # 2 -						
FLOWER DIAMETER (MM)						
TAKEN FROM 20 RANDOMLY SELECTED PLANTS						
VARIETY	M7036 Red	Pacifica Red				
MEAN	60.70	54.05				
MIN	55.0	51.5				
MAX	65.0	60.0				
STD-S	2.57	2.18				
Analysis of Variance: One Way						
Summary						
Groups	***Count***	***Sum***	***Average***	***Variance***		
Column 1	20	1214.00	60.70	6.62		
Column 2	20	1081.00	54.05	4.73		
Analysis of Variance						
Source of Variation						
	SS	***df***	***MS***	***F***	***P-value***	***F-crit***
Between Groups	442.22	1	442.22	77.93	9.70e-11	4.10
Within Groups	215.65	38	5.68			
Total	657.88	39				
LSD P=0.05	1.58					

M7036 Red	Pacifica Red
60.70	54.05
a	b

LSD (P=0.05) indicates that there was a significant difference for the flower diameter trait between M7036 Red and Pacifica Red.

The trial was organized in a completely randomized design and the test plants were grown under greenhouse conditions. The data showed a normal distribution and no pooling of data from several trials was done.

YEAR # 3 -						
FLOWER DIAMETER (MM)						
TAKEN FROM 20 RANDOMLY SELECTED PLANTS						
VARIETY	M7036 Red	Pacifica Red				
MEAN	59.10	54.75				
MIN	54.5	50.0				
MAX	63.0	60.0				
STD-S	2.29	2.21				
Analysis of Variance: One Way						
Summary						
Groups	***Count***	***Sum***	***Average***	***Variance***		
Column 1	20	1182.00	59.10	5.25		
Column 2	20	1095.00	54.75	4.88		
Analysis of Variance						
Source of Variation						
	SS	***df***	***MS***	***F***	***P-value***	***F-crit***
Between Groups	189.22	1	189.22	37.34	4.01e-07	4.10
Within Groups	192.55	38	5.07			
Total	381.77	39				
LSD P=0.05	1.49					

M7036 Red	Pacifica Red
59.10	54.75
a	b

LSD (P=0.05) indicates that there was a significant difference for the flower diameter trait between M7036 Red and Pacifica Red.

The trial was organized in a completely randomized design and the test plants were grown under greenhouse conditions. The data showed a normal distribution and no pooling of data from several trials was done.

YEAR # 1 -						
PETAL LENGTH (MM)						
TAKEN FROM 20 RANDOMLY SELECTED PLANTS						
VARIETY	M7036 Red	Pacifica Red				
MEAN	29.45	26.78				
MIN	26.0	24.0				
MAX	32.0	29.0				
STD-S	1.35	1.34				
Analysis of Variance: One Way						
Summary						
Groups	***Count***	***Sum***	***Average***	***Variance***		
Column 1	20	589.00	29.45	1.81		
Column 2	20	535.50	26.78	1.80		
Analysis of Variance						
Source of Variation						
	SS	***df***	***MS***	***F***	***P-value***	***F-crit***
Between Groups	71.56	1	71.56	39.59	0.0000002	4.10
Within Groups	68.69	38	1.81			
Total	140.24	39				
LSD P=0.05	0.89					

M7036 Red	Pacifica Red
29.45	26.78
a	b

LSD (P=0.05) indicates that there was a significant difference for the petal length trait between M7036 Red and Pacifica Red.

The trial was organized in a completely randomized design and the test plants were grown under greenhouse conditions. The data showed a normal distribution and no pooling of data from several trials was done.

YEAR # 2 -						
PETAL LENGTH (MM)						
TAKEN FROM 20 RANDOMLY SELECTED PLANTS						
VARIETY	M7036 Red	Pacifica Red				
MEAN	30.02	26.10				
MIN	26.0	24.0				
MAX	34.0	29.0				
STD-S	1.72	1.28				
Analysis of Variance: One Way						
Summary						
Groups	***Count***	***Sum***	***Average***	***Variance***		
Column 1	20	600.50	30.02	2.96		
Column 2	20	522.00	26.10	1.65		
Analysis of Variance						
Source of Variation						
	SS	***df***	***MS***	***F***	***P-value***	***F-crit***
Between Groups	154.06	1	154.06	66.88	6.668e-10	4.10
Within Groups	87.54	38	2.30			
Total	241.59	39				
LSD P=0.05	1.00					

M7036 Red	Pacifica Red
30.02	26.10
a	b

LSD (P=0.05) indicates that there was a significant difference for the petal length trait between M7036 Red and Pacifica Red.

The trial was organized in a completely randomized design and the test plants were grown under greenhouse conditions. The data showed a normal distribution and no pooling of data from several trials was done.

YEAR # 3 -						
PETAL LENGTH (MM)						
TAKEN FROM 20 RANDOMLY SELECTED PLANTS						
VARIETY	M7036 Red	Pacifica Red				
MEAN	29.18	26.35				
MIN	26.0	24.0				
MAX	32.5	29.0				
STD-S	1.81	1.37				
Analysis of Variance: One Way						
Summary						
Groups	***Count***	***Sum***	***Average***	***Variance***		
Column 1	20	583.50	29.18	3.27		
Column 2	20	527.00	26.35	1.87		
Analysis of Variance						
Source of Variation						
	SS	***df***	***MS***	***F***	***P-value***	***F-crit***
Between Groups	79.81	1	79.81	31.04	0.0000022	4.10
Within Groups	97.69	38	2.57			
Total	177.49	39				
LSD P=0.05	1.06					

M7036 Red	Pacifica Red
29.18	26.35
a	b

LSD (P=0.05) indicates that there was a significant difference for the petal length trait between M7036 Red and Pacifica Red.

The trial was organized in a completely randomized design and the test plants were grown under greenhouse conditions. The data showed a normal distribution and no pooling of data from several trials was done.

YEAR # 1 -						
RING WIDTH (MM)						
TAKEN FROM 20 RANDOMLY SELECTED PLANTS						
VARIETY	M7036 Red	Pacifica Red				
MEAN	9.52	7.65				
MIN	6.5	6.0				
MAX	11.5	10.0				
STD-S	1.34	1.33				
Analysis of Variance: One Way						
Summary						
Groups	***Count***	***Sum***	***Average***	***Variance***		
Column 1	20	190.50	9.52	1.80		
Column 2	20	153.00	7.65	1.77		
Analysis of Variance						
Source of Variation						
	SS	***df***	***MS***	***F***	***P-value***	***F-crit***
Between Groups	35.16	1	35.16	19.71	0.0000752	4.10
Within Groups	67.79	38	1.78			
Total	102.94	39				
LSD P=0.05	0.88					

M7036 Red	Pacifica Red
9.52	7.65
a	b

LSD (P=0.05) indicates that there was a significant difference for the ring width trait between M7036 Red and Pacifica Red.

The trial was organized in a completely randomized design and the test plants were grown under greenhouse conditions. The data showed a normal distribution and no pooling of data from several trials was done.

YEAR # 2 -						
RING WIDTH (MM)						
TAKEN FROM 20 RANDOMLY SELECTED PLANTS						
VARIETY	M7036 Red	Pacifica Red				
MEAN	9.62	7.52				
MIN	7.5	6.5				
MAX	12.0	8.0				
STD-S	1.27	0.47				
Analysis of Variance: One Way						
Summary						
Groups	***Count***	***Sum***	***Average***	***Variance***		
Column 1	20	192.50	9.62	1.60		
Column 2	20	150.50	7.52	0.22		
Analysis of Variance						
Source of Variation						
	SS	***df***	***MS***	***F***	***P-value***	***F-crit***
Between Groups	44.10	1	44.10	48.33	2.857e-08	4.10
Within Groups	34.67	38	0.91			
Total	78.78	39				
LSD P=0.05	0.63					

M7036 Red	Pacifica Red
9.62	7.52
a	b

LSD (P=0.05) indicates that there was a significant difference for the ring width trait between M7036 Red and Pacifica Red.

The trial was organized in a completely randomized design and the test plants were grown under greenhouse conditions. The data showed a normal distribution and no pooling of data from several trials was done.

YEAR # 3 -						
RING WIDTH (MM)						
TAKEN FROM 20 RANDOMLY SELECTED PLANTS						
VARIETY	M7036 Red	Pacifica Red				
MEAN	9.30	7.62				
MIN	7.5	7.0				
MAX	11.0	9.0				
STD-S	1.19	0.69				
Analysis of Variance: One Way						
Summary						
Groups	***Count***	***Sum***	***Average***	***Variance***		
Column 1	20	186.00	9.30	1.41		
Column 2	20	152.50	7.62	0.47		
Analysis of Variance						
Source of Variation						
	SS	***df***	***MS***	***F***	***P-value***	***F-crit***
Between Groups	28.06	1	28.06	29.92	0.000003	4.10
Within Groups	35.64	38	0.94			
Total	63.69	39				
LSD P=0.05	0.64					

M7036 Red	Pacifica Red
9.30	7.62
a	b

LSD (P=0.05) indicates that there was a significant difference for the ring width trait between M7036 Red and Pacifica Red.

The trial was organized in a completely randomized design and the test plants were grown under greenhouse conditions. The data showed a normal distribution and no pooling of data from several trials was done.

YEAR # 1 -						
LEAF LENGTH (MM)						
TAKEN FROM 20 RANDOMLY SELECTED PLANTS						
VARIETY	M7036 Red	Pacifica Red				
MEAN	83.48	87.42				
MIN	75.0	79.5				
MAX	91.0	98.0				
STD-S	4.82	5.11				
Analysis of Variance: One Way						
Summary						
Groups	***Count***	***Sum***	***Average***	***Variance***		
Column 1	20	1669.50	83.48	23.25		
Column 2	20	1748.50	87.42	26.09		
Analysis of Variance						
Source of Variation						
	SS	***df***	***MS***	***F***	***P-value***	***F-crit***
Between Groups	156.02	1	156.02	6.33	0.02	4.10
Within Groups	937.38	38	24.67			
Total	1093.40	39				
LSD P=0.05	3.29					

M7036 Red	Pacifica Red
83.48	87.42
a	b

LSD (P=0.05) indicates that there was a significant difference for the leaf length trait between M7036 Red and Pacifica Red.

The trial was organized in a completely randomized design and the test plants were grown under greenhouse conditions. The data showed a normal distribution and no pooling of data from several trials was done.

YEAR # 2 -						
LEAF LENGTH (MM)						
TAKEN FROM 20 RANDOMLY SELECTED PLANTS						
VARIETY	M7036 Red	Pacifica Red				
MEAN	84.88	90.75				
MIN	74.0	83.0				
MAX	94.0	99.0				
STD-S	5.32	4.45				
Analysis of Variance: One Way						
Summary						
Groups	***Count***	***Sum***	***Average***	***Variance***		
Column 1	20	1697.50	84.88	28.29		
Column 2	20	1815.00	90.75	19.78		
Analysis of Variance						
Source of Variation						
	SS	***df***	***MS***	***F***	***P-value***	***F-crit***
Between Groups	345.16	1	345.16	14.36	0.000524	4.10
Within Groups	913.19	38	24.03			
Total	1258.34	39				
LSD P=0.05	3.24					

M7036 Red	Pacifica Red
84.88	90.75
a	b

LSD (P=0.05) indicates that there was a significant difference for the leaf length trait between M7036 Red and Pacifica Red.

The trial was organized in a completely randomized design and the test plants were grown under greenhouse conditions. The data showed a normal distribution and no pooling of data from several trials was done.

YEAR # 3 -						
LEAF LENGTH (MM)						
TAKEN FROM 20 RANDOMLY SELECTED PLANTS						
VARIETY	M7036 Red	Pacifica Red				
MEAN	88.15	94.98				
MIN	81.0	86.0				
MAX	97.0	107.0				
STD-S	4.12	5.37				
Analysis of Variance: One Way						
Summary						
Groups	***Count***	***Sum***	***Average***	***Variance***		
Column 1	20	1763.00	88.15	17.00		
Column 2	20	1899.50	94.98	28.85		
Analysis of Variance						
Source of Variation						
	SS	***df***	***MS***	***F***	***P-value***	***F-crit***
Between Groups	465.81	1	465.81	20.32	0.0000611	4.10
Within Groups	871.29	38	22.93			
Total	1337.09	39				
LSD P=0.05	3.17					

M7036 Red	Pacifica Red
88.15	94.98
a	b

LSD (P=0.05) indicates that there was a significant difference for the leaf length trait between M7036 Red and Pacifica Red.

The trial was organized in a completely randomized design and the test plants were grown under greenhouse conditions. The data showed a normal distribution and no pooling of data from several trials was done.

FORM DEVELOPED
(4-92)

EXHIBIT C
(Vinca)

United States Department of Agriculture, Agricultural Marketing Service
Science and Technology Division, Plant Variety Protection Office
National Agricultural Library Building, Room 500
Beltsville MD 20705

OBJECTIVE DESCRIPTION OF VARIETY
VINCA (*Catharanthus* spp.)

Name of Applicant(s)	Temporary Designation	Variety Name
JOHN BODGER & SONS CO	M7036	HEATWAVE RED

Address (Street & No., or R.F.D. No., City, State, Zip Code and Country)
1800 TYLER AVENUE
SOUTH EL MONTE, CA 91733 USA

FOR OFFICIAL USE ONLY

PVPO Number
200300216

Place the appropriate number that describes the varietal characters typical of this variety in the spaces below. Right justify whole numbers by adding leading zeros if necessary. The variety that you choose for comparison should be the most similar one in terms of background and maturity. The comparison variety used should be grown in field trials **with** the application variety for 2-3 location/years (environments) **in the region and season of best adaptability**. At least one year of trials should be conducted within the United States of America. In general, measurements of quantitative traits should be taken on 15-25 randomly selected plants or plant parts to obtain averages and statistics that describe a typical field of the variety. Designate test location(s):_____

Application Variety Data	Comparison Variety Data
1. OVERALL PLANT HABIT (at flowering stage):	
Data Collection Site LOMPOC, CALIFORNIA	Comparison Variety Name PACIFICA RED
1 Species : 1=roseus 2=Other _____	1 Species
2 Ploidy : 1=Haploid 2=Diploid 3=Triploid 4=Tetraploid	2 Ploidy
1 Life Cycle : 1=Annual 2=Biennial 3=Perennial	1 Life Cycle
1 Growth Habit : 1=Determinate 2=Semi-determinate 3=Indeterminate	1 Growth Habit
2 Growth Form : 1=Upright 2=Semi-prostrate 3=Prostrate	2 Growth Form
5 Flowering : 1=Very Early 2=Early 3=Mid Season 4=Late 5=Continuous	5 Flowering season
060 Days from Planting to First Flowering	061 Days to First Flowering
180 Length of Flowering Season in Days	180 Days - Flowering Season Length
034.0 cm Plant Height at Maturity	035.1 cm Plant Height
056.1 cm Plant Width at Maturity	057.0 cm Plant Width
3 Plant Height Class : 1=Extra Dwarf 2=Dwarf 3=Semi-dwarf 4=Tall	3 Plant Height Class
2 Plant Width Class : 1=Compact 2=Semi-compact 3=Spreading/Lax	2 Plant Width Class
2. STEM:	
1 Profile: 1=Straight 2=Zig-Zag	1 Profile
3 Branching Pattern : 1=Single Stem 2=Few Branches 3=Many Branches	3 Branching Pattern
03.2 cm Stem Length from base of stem to terminal flower	03.2 cm Stem Length (total)
00 Number of Internodes below First Branch	00 Number of Internodes below First Branch
02 Number of First Order Branches (from main stem)	02 No. of First Order Branches (from main stem)
1 Stem Anthocyanin: 1=Absent 2=Along Veins only 3=Solid Coloration	1 Stem Anthocyanin

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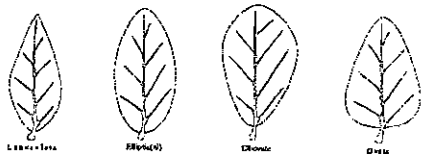
Application Variety Data	Page 2	Comparison Variety Data
3. FOLIAGE:		
1 Leaf Type: 1=Simple 2=Compound		1 Leaf Type
1 Leaf Margin : 1=Entire 2=Serrate 3=Other _____		1 Leaf Margin
1 Leaf Odor : 1=None 2=Mild 3=Strong		1 Leaf Odor
2 Petiole Anthocyanin : 1=Absent 2=Mild 3=Strong		2 Petiole Anthocyanin
2 Leaf Shape : 1=Lanceolate 2=Elliptic 3=Obovate 4=Ovate		2 Leaf Shape
030.1 mm Leaf Width		027.9 mm Leaf Width
073.0 mm Leaf Length		076.5 mm Leaf Length
LEAF DORSAL SIDE:		**LEAF DORSAL SIDE**
2 Leaf Color : 1=Light Green 2=Medium Green 3=Dark Green 4=Other (describe) _____		2 Leaf Color
Color Chart Name RHS Color Chart Reading 137B		Color Chart Reading 137C
2 Pubescence : 1=Absent 2=Light 3=Heavy		2 Pubscence
2 Luster : 1=Dull 2=Shiny		2 Luster
LEAF VENTRAL SIDE:		**LEAF VENTRAL SIDE**
1 Leaf Color : 1=Light Green 2=Medium Green 3=Dark Green 4=Other (describe) _____		1 Leaf Color
Color Chart Name RHS Color Chart Reading 138A		Color Chart Reading 146B
2 Pubescence : 1=Absent 2=Light 3=Heavy		2 Pubscence
1 Luster : 1=Dull 2=Shiny		1 Luster
4. FLOWER:		
1 Type : 1=Single 2=Semi-Double 3=Double		1 Type
1 Form : 1=Flat 2=Cupped 3=Other _____		1 Form
1 Shape : 1=Round (petals overlap) 2=Intermediate 3=Star (petals gapped)		1 Shape
1 Flower Odor : 1=None 2=Mild 3=Strong		1 Flower Odor
1 Pedicel Anthocyanin : 1=Absent 2=Faint 3=Strong		1 Pedicel Anthocyanin
55 Number Flowers per Plant		60 Number Flowers per Plant
051.1 mm Flower Diameter		047.1 mm Flower Diameter
02.0 mm Orifice Size (including the opening of the corolla tube)		02.0 mm Orifice Size
05.4 mm Ring Width (from outside orifice to edge of color band)		02.7 mm Ring Width
031.4 mm Petal Width (at widest point)		027.6 mm Petal Width
024.9 mm Petal Length (from ring to outer edge)		022.8 mm Petal Length
Application Variety Data		Comparison Variety Data

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Application Variety Data	Page 3	Comparison Variety Data

5. FLOWER COLORS : (Note: Common Color Charts: RHS=Royal Horticultural Society Colour Chart; Munsell=Munsell Book of Color)

	Color Verbal Name	Color Chart Code	Color Chart Name		Color Name	Chart Code	Chart Name
EXAMPLE	**Light Blue**	**106C**	**RHS**				
Petal Color	Rosy Red	57A (1)	RHS	Petal Color	Rosy Red	57B(2)	RHS
Ring Color	Bright Red	53A	RHS	Ring Color	Bright Red	53A	RHS
Orifice Color Inside	Pale Yellow	11A	RHS	Inside Orifice Color	Cream Yellow	10B	RHS
Other Color (describe location or placement)	1) Petals start one shade darker than 57A, lightening to true 57A as they age. Petal margins fade to 63A.			Other	2) The petals start 57B, shading to 57A toward the center of the flower. As flowers age, they become all 57B.		

6. SEEDS (Measure mature (dry) seeds):

4 Seed Set : 1=None 2=Poor 3=Fair 4=Good 5=Excellent

4 Seed Coat Color: 1=White 2=Tan 3=Brown 4=Black 5=Other _____

1760.__ mg Weight per 1000 Seeds

4 Seed Set

4 Seed Coat Color

1690.__ mg Seed Weight

7. RESISTANCE: Test as many disease and insect reactions as possible before applying for protection. Tests for disease and insect reactions should include a resistant check and a susceptible check for each disease or insect being tested. When using disease resistance to describe novelty, information on these checks should be included in the novelty statement in support of the novelty claim. Rate the application variety and the comparison variety on a scale of 1 (most susceptible) to 9 (most resistant) for each disease or insect reaction being reported. Give the scientific and common names of each disease/insect for completeness, and the race or strain, if known. **(Rate from 1 (most susceptible) to 9 (most resistant)):**

Rating	Disease/Insect Name (give race or strain, if known)	Rating	Disease/Insect Name
__	Not tested	__	Not tested
__		__	
__		__	
__		__	

Application Variety Data	Comparison Variety Data

8. Attach ONE photographic print of the application variety and the comparison variety described above, indicating the identity of each variety. This photograph should show flower heads of each variety at a magnification sufficient to identify most of the verbal descriptors given above. (Additional photographs in support of this application may be supplied as part of the Exhibits B or D.)

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

EXHIBIT E
STATEMENT OF THE BASIS OF OWNERSHIP

Application is required in order to determine if a plant variety protection certificate is to be issued *(7 U.S.C. 2421)*. The information is held confidential until the certificate is issued *(7 U.S.C. 2426)*.

1. NAME OF APPLICANT(S)	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER	3. VARIETY NAME
JOHN BODGER & SONS COMPANY	M7036	HEATWAVE RED

4. ADDRESS *(Street and No., or R.F.D. No., City, State, and ZIP, and Country)*	5. TELEPHONE *(Include area code)*	6. FAX *(Include area code)*
1800 TYLER AVENUE SOUTH EL MONTE, CA 91733 USA	626-442-6161	626-442-4100

7. PVPO NUMBER: 200300216

8. Does the applicant own all rights to the variety? Mark an "X" in the appropriate block. **If no, please explain.** [XX] **YES** [ ] **NO**

9. Is the applicant (individual or company) a U.S. national or a U.S. based company? **If no, give name of country.** [XX] **YES** [ ] **NO**

10. Is the applicant the original owner? [XX] **YES** [ ] **NO** **If no, please answer one of the following:**

a. If the original rights to variety were owned by individual(s), is (are) the original owner(s) a U.S. National(s)?
[ ] **YES** [ ] **NO** **If no, give name of country**

b. If the original rights to variety were owned by a company(ies), is (are) the original owner(s) a U.S. based company?
[XX] **YES** [ ] **NO** **If no, give name of country**

11. Additional explanation on ownership *(Trace ownership from original breeder to current owner. Use the reverse for extra space if needed)*:

THIS VARIETY WAS BRED BY MICHAEL HEFFNER WHILE HE WAS AN EMPLOYEE OF JOHN BODGER & SONS COMPANY, ON COMPANY PROPERTY USING COMPANY RESOURCES. ALL BREEDING WORK WAS DONE IN THE STATE OF CALIFORNIA. THE BREEDER RETAINS OWNERSHIP OR ANY OTHER RIGHTS TO THE VARIETY. THE BASIS FOR JOHN BODGER & SONS COMPANY'S OWNERSHIP OF THIS VARIETY IS CALIFORNIA LABOR CODE 2860 WHICH STATES: "EVERYTHING WHICH AN EMPLOYEE ACQUIRES BY VIRTUE OF HIS EMPLOYMENT, EXCEPT THE COMPENSATION WHICH IS DUE TO HIM FROM HIS EMPLOYER, BELONGS TO THE EMPLOYER, WHETHER ACQUIRED LAWFULLY OR UNLAWFULLY, OR DURING OR AFTER THE EXPIRATION OF THE TERM OF HIS EMPLOYMENT."

PLEASE NOTE:

Plant variety protection can only be afforded to the owners (not licensees) who meet the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.

2. If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.

3. If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.

The original breeder/owner may be the individual or company who directed the final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definitions.

Addendum to Exhibit E
Statement of Basis of Applicant's Ownership
Vinca Heatwave Red

The breeder of this variety is: Michael Heffner

The owner of the variety is: John Bodger and Sons Company

The breeders of this variety are citizens of the United States.

All breeding work on this variety was done while the breeder was an employee of John Bodger and Sons Company, on company property using company resources. All breeding work was done in the State of California.

The breeder retains no ownership or any other rights to the variety. The basis for John Bodger and Sons Company's ownership of this variety is California Labor Code §2860 which states: "Everything which an employee acquires by virtue of his employment, except the compensation which is due to him from his employer, belongs to the employer, whether acquired lawfully or unlawfully, or during or after the expiration of the term of his employment."